Abstracts

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The ulcerated leg severity assessment score for prediction of venous leg ulcer healing

Kulkarni SR, Gohel MS, Minor WJ, et al. Br J Surgery 2007;94:189-93.

Conclusion: The Ulcerated Leg Severity Assessment (ULSA) score identifies patients with venous ulcers unlikely to respond to conventional treatment.

Summary: Most, but not all, venous ulcers will heal with compression therapy. The authors sought to develop an assessment score to potentially identify patients whose ulcers would not heal with conventional compression therapy and, therefore, should perhaps be offered alternative therapy for ulcer healing early in their course. Baseline factors affecting venous ulcer healing were assessed in patients with venous ulcers seen between March 1999 and August 2001. All patients were initially treated with multilayer compression therapy. Variables related to 24-week healing were identified, and a Cox regression model was developed to identify risk factors that predicted ulcer healing. From this model, a scoring system was developed and subsequently prospectively validated between February 2004 and March 2005.

The baseline study included 229 patients with venous ulcers. Patient age, ulcer chronicity, and venous refill time (VRT) of ≤20 seconds were identified as risk factors for nonhealing. The authors used these risk factors and hazard ratios from the Cox analysis and derived the following formula: Ulcerated Leg Severity Assessment (ULSA) score = age + chronicity – 50 (when VRT is >20 seconds). Patients with an ULSA score ≤50 had higher 24-week ulcer-healing rates than those with scores >50. This was in both the baseline study ($P < .001$) and the follow-up prospective validation study performed in 86 patients ($P = .007$).

Comment: Optimal therapy for venous ulceration continues to be debated. The authors suggest that an elevated ULSA score may indicate patients who early in the course of treatment may benefit from therapies other than compression therapy. Their data, however, shows no benefit with use of these "alternative" therapies. It only identifies individuals who will not do well with compression therapy. It certainly cannot be assumed patients who do not do well with compression therapy will be benefited by alternative therapies. Alternative therapies may also not work well in patients with elevated ULSA scores.

Homocystine-lowering therapy and risks for venous thromboembolism: A randomized trial

Ray JG, Kearon C, Yi Q. The Heart Outcomes Prevention Evaluation 2 (HOPE-2) Investigators. Ann Intern Med 2007;146:761-7.

Conclusion: The risk of symptomatic venous thromboembolism (VTE) is not decreased by lowering homocystine levels with folic acid and vitamins B_6 and B_{12}.

Summary: Elevated homocystine levels are a risk factor for VTE. It is, however, unknown whether decreasing homocystine levels with vitamin therapy will lower the risk of VTE. The authors sought to determine whether lowering homocystine levels will lower the risk of symptomatic VTE. This was a secondary analysis of data obtained as part of the Heart Outcomes Prevention Evaluation 2 (HOPE-2) trial. Data were derived from 145 centers in 13 countries. Included in the study were 5522 persons aged 55 or older who had diabetes or known cardiovascular disease with at least one risk factor for vascular disease. Patients were randomized to receive vitamin therapy consisting of 2.5 mg of folic acid, 1 mg of vitamin B_{12}, and 50 mg of vitamin B_6, or to receive placebo. Medications were administered for 5 years. End points included symptomatic deep venous thrombosis or pulmonary embolism.

In patients treated with vitamin therapy, the mean homocystine level decreased 2.2 μmol/L. In the placebo group, mean homocystine levels increased 0.80 μmol/L. There were 88 instances VTE with a mean follow-up of 5 years. VTE rate was the same in the vitamin therapy group and the placebo group (0.35/100 person-years; hazard ratio, 1.01; 95% confidence interval [CI], 0.66 to 1.53). The risk for deep venous thrombosis was not reduced by vitamin therapy (hazard ratio, 1.04; 95% CI, 0.63 to 1.72), nor was the risk of pulmonary embolism (hazard ratio, 1.14; 95% CI, 0.57 to 2.28) or unprovoked VTE (hazard ratio, 1.21; 95% CI, 0.66 to 2.23).

Comment: The HOPE-2 trial evaluated the effect of homocystine-lowering therapy on major arterial vascular disease. This article represents a secondary analysis of the HOPE 2 trial. The trial did not include patients specifically at high risk for VTE. Elevated homocystine is a relatively minor risk factor for VTE, and therefore, it is not surprising that the minor decrease in homocystine levels associated with vitamin therapy in the HOPE 2 participants did not result in a detectable rate of decrease of VTE. The data cannot be applied to patients at high risk for VTE or those with markedly elevated levels of homocystine. Nevertheless, this is another of a number of studies that indicate that although elevated homocystine may be a risk factor or marker for venous or arterial disease, vitamin therapy to lower the homocystine levels does not appear to clinically affect vascular events.

Dental and periodontal status and risk for progression of carotid atherosclerosis: The Inflammation and Carotid Artery Risk for Atherosclerosis Study dental substudy

Schillinger T, Kluger W, Exner M, et al. Stroke 2006;37:2271-6.

Conclusion: Oral hygiene and tooth loss are associated with increased levels of carotid stenosis and predict future progression of carotid artery atherosclerosis.

Summary: There may be a link between periodontal and dental disease and atherosclerosis. It is suggested that chronic inflammation triggered by periodontitis plays a role in the etiology of atherosclerosis. In this study, the authors studied a subset of patients from the Inflammation and Carotid Artery Risk for Atherosclerosis study. This is a prospective study involving serial ultrasound assessments of patients likely to have clinically relevant atherosclerosis of the carotid artery. For the current study, 411 patients were randomly selected from the 1268 participants in the Inflammation and Carotid Artery Risk for Atherosclerosis study. Patients were evaluated for dental and periodontal status and oral hygiene at study entrance using three World Health Organization validated indices: DMFT (decayed, missing, filled teeth), SLI (Silness-Lowe index), and CPITN (community periodontal index for treatment needs), respectively. Carotid duplex ultrasound was used to measure carotid stenosis at baseline and after a median of 7.5 months (range, 6 to 9 months).

DMFT ($P < .01$), SLI ($P = .048$), CPITN ($P = .007$), and edentulousness ($P = .007$) all were associated with baseline levels of carotid stenosis. During this study period, progression of carotid stenosis was noted in 48 of 411 patients (11.7%). Adjusted odds ratios were 1.11 (95% confidence interval [CI], 1.01 to 1.22, $P = .032$) for DMFT, 1.77 (95% CI, 1.09 to 2.79) for SLI, and 1.51 (95% CI, 0.89 to 2.45, $P = 0.16$) for CPITN. DMFT and SLI predicted disease progression independent of cardiovascular risk factors and baseline degree of stenosis. Edentulous patients also had a higher risk for disease progression compared with patients with teeth (adjusted odds ratio, 2.10; 95% CI, 106 to 4.16; $P = .033$).

Comment: The role of dental and periodontal disease in atherosclerosis is controversial. There are many possible explanations for an observed association between dental disease and atherosclerosis, and unmeasured cofounders like socioeconomics status may modify observed associations. It may be that dental disease merely serves as an added inflammatory component to an already inflammatory vascular disease or that transient bacteriemia associated with poor dental hygiene affects the development of atherosclerotic plaques. Speculation with regard to the role of dental disease and the etiology of atherosclerosis will continue. There are so many potential known and unknown confounding variables that it is very unlikely this question will ever be settled to anyone's satisfaction.

Smoking, hypertension, alcohol consumption and risk of abdominal aortic aneurysm in men

Wong DR, Willett WC, Rimm EB. Am J Epidemiol 2007;165:838-45.

Conclusion: Alcohol consumption correlates with the diagnosis of abdominal aortic aneurysm (AAA).

Summary: Moderate alcohol consumption appears to have a protective effect for ischemic heart disease. Little known, however, about the effects of alcohol consumption and AAA. The authors analyzed prospective, biannually updated data from the Health Professionals Follow-up Study (HPFS). This is a prospective cohort of 51,529 United States men who were aged 40 to 75 years at the inception of the study in 1986. The authors excluded from this analysis individuals without complete dietary alcohol information in the database, those with a history of ischemic cardiac disease, and those with history of stroke or transient ischemic attack. Also excluded were nondrinkers who had never used alcohol or who had stopped using alcohol during the previous 10 years. This left 39,352 men for analysis. The authors determined the association between alcohol consumption in grams per day and the incident diagnosis of AAA. This was assessed at baseline and updated every 4 years. Data were controlled for previously reported cardiovascular risk factors.

There were 576,374 person-years of follow-up and 376 newly diagnosed AAAs. Adjusting for other risk factors for AAA (smoking, hyperten-